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**west virginia** department of environmental protection

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Office of Oil and Gas  
601 57th Street SE  
Charleston, WV 25304  
(304) 926-0450  
(304) 926-0452 fax

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

December 03, 2013

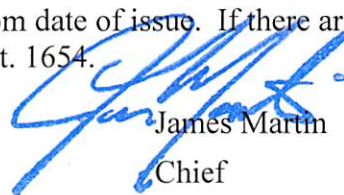
**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-4500262, issued to EQT PRODUCTION COMPANY, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.



James Martin  
Chief

Operator's Well No: 018140 (RITTER #106)  
Farm Name: HEARTWOOD FORESTLAND FU  
**API Well Number: 47-4500262**  
**Permit Type: Plugging**  
Date Issued: 12/03/2013

**Promoting a healthy environment.**

## PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

### CONDITIONS

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1. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
2. Well work activities shall not constitute a hazard to the safety of persons.

Date: October 21, 2013  
Operator's Well  
Well No. 018140 (Ritter #106)  
API Well No.: 47 045 - 00262

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

CK 16877  
10000

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

- 4) Well Type: Oil        Gas   X   Liquid Injection        Waste Disposal:         
If Gas, Production          X   Or Underground storage        Deep        Shallow   X
- 5) Elevation: 1422' Watershed: Mill Branch  
Location: Triadelphia 03 County: Logan 45 Quadrangle: Mallory 454  
District:
- 6) Well Operator EQT Production Company  
120 Professional Place  
Address: Bridgeport, WV 26330
- 7) Designated Agent: Rex C. Ray  
Address: 120 Professional Place  
Bridgeport, WV 26330
- 8) Oil & Gas Ralph Triplett  
Name: 5539 McClellan Hwy  
Address: Branchland, WV 25506
- 9) Plugging Contractor:  
Name: HydroCarbon Well Service  
Address: PO BOX 995  
Buckhannon, WV 26201

- 10) Work Order: The work order for the manner of plugging this well is as follows:

**See Attachment for details and procedures.**

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Office of Oil and Gas  
OCT 24 2013  
WV Department of  
Environmental Protection

OFFICE USE ONLY

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector        Date       

J m m FOR RALPH

## PLUGGING PROGNOSIS

**Ritter Lumber Company # 106 (018140)**

Logan County, W.V.

API # 47-045-00262

BY: Doug Fry

DATE: 3/18/13

**CURRENT STATUS:**

13 3/8" @ 12'

10 3/4" @ 531'

8 5/8" @ 1920' Cmt w/ 30'

7" @ 2612'

2 3/8" tubing @ 3558' - 2 3/8" packer @ 2972' - Perf @ 3527'-3558'

TD 3565'

**Fresh Water @ 42'****Gas shows/ Perfs @ 1046'-1400' Sand, 2590'-2985' Big Lime, 3518'-3558' Berea Sand,****Oil Shows @ None Reported****Salt Sand top 1007'**

SALT WATER 1560'

**Coal: 20' - 42' - 515' - 1620'****Stimulation;**

1. Notify inspector, **Ralph Triplett @ 304-389- 0350** 24 hrs prior to commencing operations.
2. Attempt to pull 2" tubing @ 3558' and packer @ 2972'. If tubing packer will not pull TIH w/ wire line to 2972' shoot off 2" tubing and pull out of hole and check condition.

GEL HOLE BEFORE SETTING 172' C1A CEMENT PLUG.

3. TIH w/ tubing to 2972'; Set 172' C1A Cement Plug @ 2972' to 2800' ( **Packer, 2" cut, Berea shows** ).
4. TOOH w/ tubing, gel hole @ 2800'-2662', TOOH w/ tubing.
5. TIH w/ wire line @ 2590', perforate 7" @ 2590', TOOH w/ wire line.
6. Attempt to pull 7" csg, If 7" casing not free, free point 7" casing, cut @ free point, TOOH w/ 7" casing if the hole will not cave in pull casing when possible. Set a 100' C1A Cement Plug 50' In/Out of cut. Perf all Salt Sand top, FW, Gas, Oil and Coal shows below the 7" cut. Do not omit any plugs shown below.
7. TIH w/ tubing to 2662'; Set 172' C1A Cement Plug @ 2662' to 2490' ( **Big lime show, 7" csg pt** ).
8. TOOH w/ tubing, Gel Hole @ 2490' to 1970'.
9. TOOH w/ tubing @ 1970', Set 100' C1A Cement plug @ 1970' to 1870'. ( **8 5/8" csg pt** ).
10. TOOH w/ tubing, Gel Hole @ 1870' to 1670'.
11. TOOH w/ tubing, Free Point 8 5/8" csg, cut 8 5/8" csg @ Free Point, TOOH w/ 8 5/8" csg. Set a 100' C1A Cement Plug 50' In/Out of cut. Perf all 1<sup>st</sup> Salt Sand top, FW, Gas, Oil and Coal shows below the 8 5/8" cut. Do not omit any plugs shown below.
12. TIH w/ tubing to 1670'; Set 100' C1A Cement Plug @ 1670' to 1570' ( **Coal show** ).
13. TOOH w/ tubing,, Gel Hole @ 1570' to 1046'.
14. TOOH w/ tubing, @ 1046', Set 100' C1A Cement plug @ 1046' to 946'. ( **Salt Sand show** ).
15. TOOH w/ tubing,, Gel Hole @ 946' to 581'. TOOH w/ tubing.
16. TIH w/ wire line @ 515', perforate 10" @ 515', TOOH w/ wire line.
17. Free Point 10" csg, cut 10" csg @ Free Point, TOOH w/ 10" csg. Set a 100' C1A Cement Plug 50' In/Out of cut. Perf all Salt Sand top, FW, Gas, Oil and Coal shows below the 10" cut. Do not omit any plugs shown below.
18. TOOH w/ tubing @ 581', Set 116' C1A Cement plug @ 581' to 465'. ( **10 3/4" csg pt, Coal show** ).
19. TOOH w/ tubing,, Gel Hole @ 465' to 200'. TOOH w/ tubing.
20. TOOH w/ tubing @ 200', Set 200' C1A cement plug @ 200' to Surface'. ( **13 3/8" csg pt, FW show, 2 coal shows** ).
21. Top off as needed
22. Set monument to WV DEP specs
23. Reclaim Location to WV DEP Specifications.

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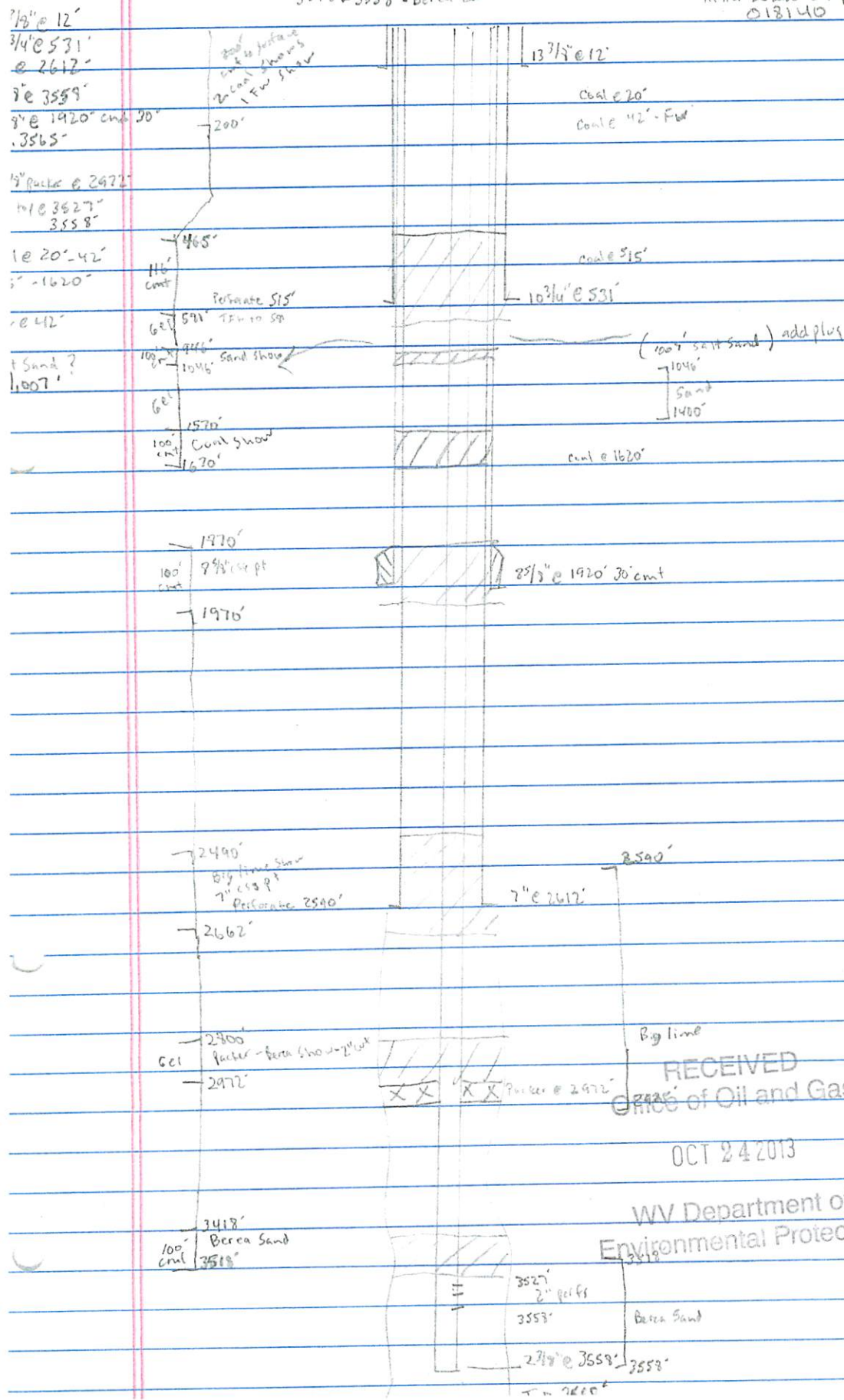
OCT 24 2013

WV Department of  
Environmental Protection



Gas @ 1046' - 1400' - Sand  
2540' - 2935' - Big Lime  
3518' - 3553' - Berea Sand

Logan C.O.  
47-045-00262  
Ritter Lumber Company 106  
018140



WEST VIRGINIA DEPARTMENT OF MINES  
OIL & GAS DIVISION  
W E L L R E C O R D

4500262P

Permit No. LOG-262  
Gilbert Quad.

Gas

Company United Producing Co., Inc.  
Address Box 1913, Charleston 27, W. Va.  
Farm W. M. Ritter Lumber Co.  
Location Mill Br. of Elk Cr. Acres 67,182  
Well No. 106 (1814) Elev. 1410.6' DF  
District Triadelphia County - Logan  
Surface W. M. Ritter Lumber Co.  
115 East Rich St., Columbus, O.  
Commenced May 14, 1951  
Completed Sept. 7, 1951  
Date Shot 9/8/51 from 3518' to 3558'  
With 200 qts. nitroglycerin  
Open Flow 115/10ths Water in 2"  
Volumb 452,000 Cu. Ft.  
R. P. 645 lbs. 48 hrs.  
Fresh Water 42' Salt Water 1560'

CASING & TUBING

13 3/8	12	12
10 3/4	531	531
8 5/8	1920	1920
7" OD	2612	2612
2 3/8	3558	3558

Depth Set 2972  
Perf. Top 3527  
Perf. Bottom 3558'

Cemented 8 5/8 30'  
7/24/51  
Coal at 20'24"; 42'36";  
515'12"; 1620'48".

Clay	0	8	Lime	Gritty	1877	1902
Sand	8	20	Red Rock		1902	1908
Coal	20	22	Slate		1908	1912
Sand	22	42	Red Rock		1912	1917
Coal	42	45	Lime	Gritty	1917	1970
Sand	45	100	Slate & Shells		1970	2068
Slate	100	145	Maxon Sand		2068	2154
Lime Gritty	145	175	Red Rock		2154	2186
Sand	175	249	Lime	Gritty	2186	2230
Slate	249	315	Slate & Shells		2230	2293
Sand	315	325	Red Rock		2293	2350
Slate	325	420	Lime	Gritty	2350	2385
Lime Gritty	420	450	Red Rock		2385	2413
Slate	450	465	Lime	Gritty	2413	2435
Lime	465	475	Slate & Shells		2435	2452
Slate	475	515	Lime		2452	2475
Coal	515	516	Red Rock		2475	2495
Lime	516	580	Little Lime		2495	2515
Slate	580	650	Slate & Shells		2515	2590
Sand	650	885	Big Lime		2590	2985
Slate & Shells	885	903	Injun Sand		2985	3026
Sand	903	940	Lime	Gritty	3026	3080
Slate & Shells	940	1046	Sand	Red	3080	3090
Sand	1046	1400	Slate & Shells		3090	3510
Slate	1400	1410	Shale	Brown	3510	3518
Lime Gritty	1410	1425	Berea Sand		3518	3558
Slate	1425	1440	Slate		3558	
Sand	1440	1620	TOTAL DEPTH			3565'
Coal	1620	1624				
Sand	1624	1630	Water	42'	Hole full	
Slate	1630	1660	Gas	1350'	Show	
Sand	1660	1775	Water	1560'	1 blr. 2 hrs	
Slate	1775	1783	Gas	2945-2950	Show	
Red Rock	1783	1810	Gas	3547	Show	
Slate & Shells	1810	1818	Gas	3552'	6/10 W 2"	
Lime	1818	1843			103 MCF	
Slate	1843	1877				

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WW-4-A  
Revised 6/07

1) Date: October 21, 2013  
2) Operator's Well Number  
018140 (Ritter #106)  
3) API Well No.: 47 045 - 00262  
State County Permit

**STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT  
DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL & GAS  
NOTICE AND APPLICATION TO PLUG AND ABANDON WELL**

4) Surface Owner(s) to be served:	5) (a) Coal Operator:
(a) Name <u>Heartwood Forestland Fund IV</u> ✓	Name <u>None</u>
Address <u>P.O. Box 9162</u>	Address _____
<u>Chappel Hill, NC 27515</u>	_____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>Natural Resource Partners</u> ✓
_____	<u>5260 Irwin Road</u>
_____	Address <u>Huntington, WV 25705</u>
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>Ralph Triplett</u>	(c) Coal Lessee with Declaration
Address <u>5539 McClellan Hwy</u>	Name <u>Ramaco LLC</u> ✓
<u>Branchland, WV 25506</u>	Address <u>250 W. Main St. Suite 210</u>
Telephone <u>304-389-0350</u>	<u>Lexington, KY 40507</u>
_____	_____

**TO THE PERSONS NAMED ABOVE:**

You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Division of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator:  
OFFICIAL SEAL  
Notary Public, State Of West Virginia  
NICHOLAS L. BUMGARDNER Its  
Rt. 1 Box 4  
Liberty, WV 25124  
My Commission Expires June 27, 2018  
Address:  
Telephone:

EQT Production Company  
Victoria J. Roark  
Permitting Supervisor  
PO Box 280  
Bridgeport, WV 26330  
(304) 848-0076

Subscribed and sworn before me this

My Commission Expires:

day of

OCTOBER

2013

Notary Public

The Office of Oil & Gas processes your personal information, such as name, address and phone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

OCT 24 2013

Office of Oil and Gas  
Environmental Protection



WW-9  
Revised 2/03

Page \_\_\_\_ of \_\_\_\_  
2) Operator's Well Number  
**018140 (Ritter #106)**  
3) API Well No.: 47 045 - 00262

**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL & GAS  
CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM  
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE**

Operator Name: EQT PRODUCTION COMPANY OP ID: \_\_\_\_\_

Watershed: Mill Branch Quadrangle: Mallory

Elevation: 1422' County: Logan District: Triadelphia

Description of anticipated Pit Waste: Formation Fluids

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes\_\_\_ No X

Will synthetic liner be used in the pit? Yes Is so, what ml.? 30 ml

Proposed Disposal Method for Treated Pit Wastes:

- ☒ Land Application  
☐ Underground Injection - UIC Permit Number \_\_\_\_\_  
☐ Reuse (at API Number) \_\_\_\_\_  
☐ Offsite Disposal Permit #. \_\_\_\_\_  
☐ Other: Explain \_\_\_\_\_

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. \_\_\_\_\_

If oil based, what type? Synthetic, petroleum, etc. \_\_\_\_\_

Additives to be used? \_\_\_\_\_

Will closed loop system be used? \_\_\_\_\_

Drill Cuttings disposal method? Leave in pit, landfill, remove offsite, etc. \_\_\_\_\_

If left in pit and plan to solidify what medium will be used? Cement, Lime, sawdust \_\_\_\_\_

Landfill or offsite name/permit number? \_\_\_\_\_

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Division of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any terms or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

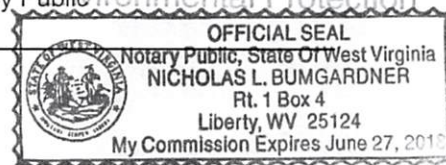
Company Official Signature [Signature] RECEIVED

Company Official (Typed or Printed) Victoria Roark Office of Oil and Gas

Company Official Title Permitting Supervisor-WV OCT 24 2013


Subscribed and sworn before me this 21 day of OCTOBER 2013


My Commission Expires 6/27/2018 Notary Public



**OPERATOR'S WELL NO.:**  
**018140 (Ritter #106)**

## LEGEND

Property Boundary 

Diversion 

Road 

Spring 

Wet Spot 

Planned Fence 

Drain Pipe with size in inches 

Water Way 

Existing Fence 

Stream 


Cross Drain 

Open Ditch 

Artificial Filter Strip 

Rock 

North

N 

Building 

Water well



Drill site



Pit with Cut Walls 

Pit with Compacted Walls 

Area of Land Application of Pit Waste 

Proposed Revegetation Treatment: Acres Disturbed: 1± Prevegetation pH 5.8

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20) or equivalent 1/3 ton lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre or hydroseed.

### SEED MIXTURES

#### Area I

Seed Type	lbs/acre
KY-31	40
Alsike Clover	5
Annual Rye	15

#### Area II

Seed Type	lbs/acre
Orchard Grass	15
Alsike Clover	5

### ATTACH:

Drawing(s) of road, location, pit and proposed area for land application.

Photocopies section of involved 7.5' topographic sheet.

Plan approved by: \_\_\_\_\_

Comments: \_\_\_\_\_

Title: \_\_\_\_\_

Field Reviewed?    Yes    No

Date: \_\_\_\_\_

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OCT 24 2013

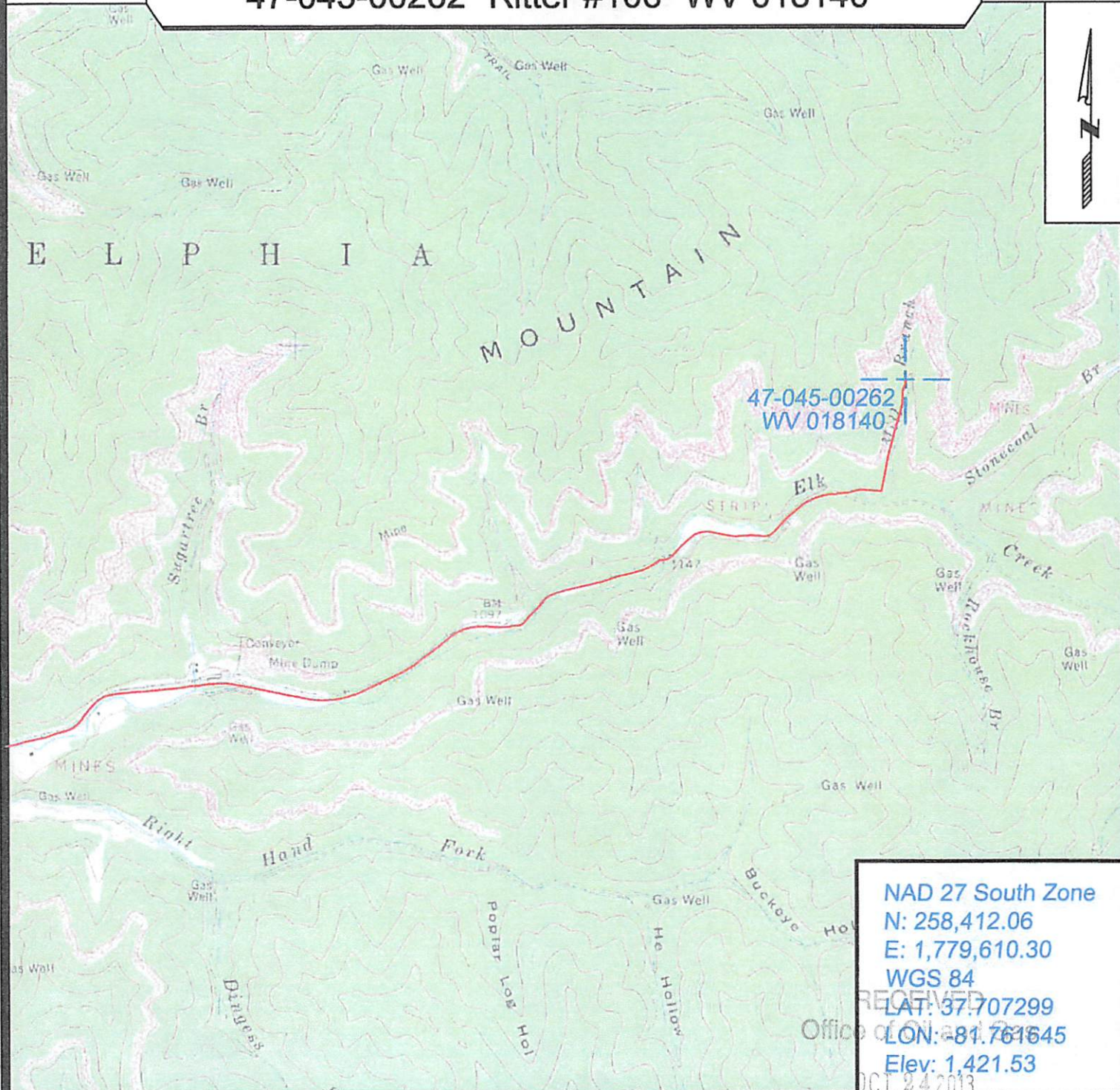
WV Department of  
Environmental Protection



Topo Quad: MalloryScale: 1" = 2000'County: LoganDate: September 27, 2013District: TriadelphiaProject No: 21-21-00-08

47-045-00262 "Ritter #106" WV 018140

Topo



SURVEYING AND MAPPING SERVICES PERFORMED BY:

**ALLEGHENY SURVEYS, INC.**

1-800-482-8606  
P.O. BOX 438  
BIRCH RIVER, WV 26610  
PH: (304) 649-8606  
FAX: (304) 649-8608

PREPARED FOR:

**EQT Production Company**

WV Department of  
Environmental Protection  
P.O. Box 280  
Bridgeport, WV 26330



WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas  
**WELL LOCATION FORM: GPS**

API: 47-045-00262 WELL NO.: WV 018140 (Ritter #106)

FARM NAME: Ritter Lumber Company

RESPONSIBLE PARTY NAME: EQT Production Company

COUNTY: Logan DISTRICT: Triadelphia

QUADRANGLE: Mallory 7.5'

SURFACE OWNER: Heartwood Forestland Fund IV

ROYALTY OWNER: Plum Creek Timberlands, LP

UTM GPS NORTHING: 4173613

UTM GPS EASTING: 432864 GPS ELEVATION: 433 m ( 1422 ft )

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:  
Survey grade GPS       : Post Processed Differential         
Real-Time Differential         
Mapping Grade GPS X: Post Processed Differential X  
Real-Time Differential

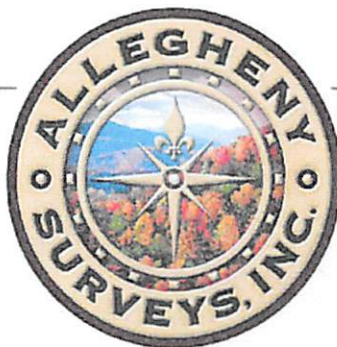
4. **Letter size copy of the topography map showing the well location.**

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

Ben R. Saylor  
Signature

P.S. 2092  
Title

10/11/13  
Date



## POTENTIAL WATER SAMPLE DATA SHEET

CLIENT: EQT PRODUCTION COMPANY INC.

LEASE NAME AND WELL No. Ritter #106 47-045-00262 (WV 018140)

### POTENTIAL SAMPLE LOCATIONS

There appears to be no known water samples within the required 1000' of the existing well WV 018140.

**BIRCH RIVER OFFICE**  
P.O. Box 438 • 237 Birch River Road  
Birch River, WV 26610  
phone: 304-649-8606  
fax: 304-649-8608

**BRIDGEPORT OFFICE**  
172 Thompson Drive  
Bridgeport, WV 26330  
phone: 304-848-5035  
fax: 304-848-5037

**CALDWELL OFFICE**  
212 Cumberland Street  
Caldwell, OH 43724  
phone: 740-305-5007  
fax: 740-305-5126

**ALUM CREEK OFFICE**  
P.O. Box 108 • 1413 Childress Road  
Alum Creek, WV 25003  
phone: 304-756-2949  
fax: 304-756-2948



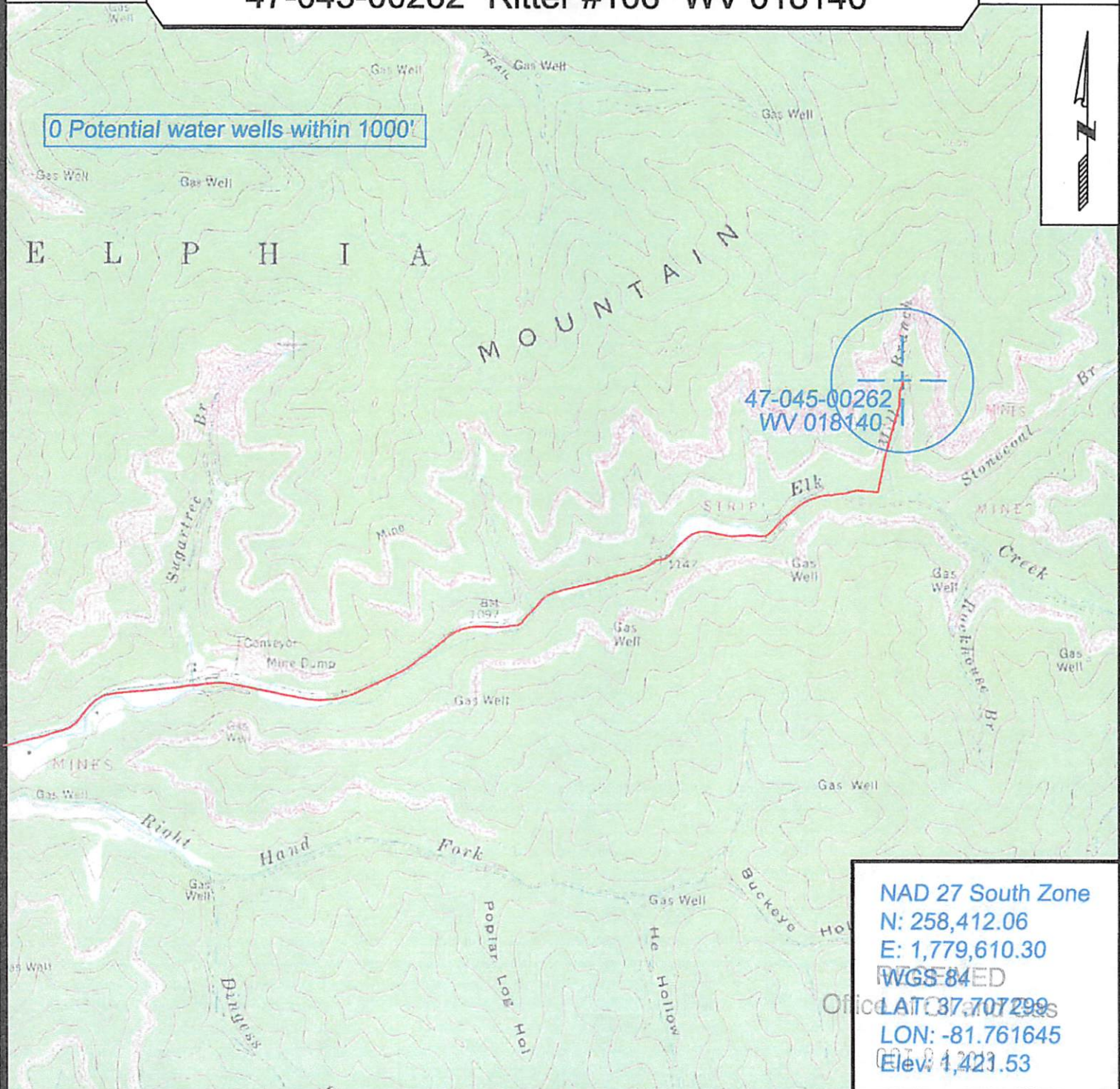
Topo Quad: Mallory Scale: 1" = 2000'  
 County: Logan Date: September 27, 2013  
 District: Triadelphia Project No: 21-21-00-08

Water

47-045-00262 "Ritter #106" WV 018140

Topo

0 Potential water wells within 1000'



NAD 27 South Zone  
 N: 258,412.06  
 E: 1,779,610.30  
 WGS 84  
 LAT: 37.707299  
 LON: -81.761645  
 Elev: 1,421.53



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PREPARED FOR:

WV Department of  
 Environmental Protection  
**EQT Production Company**

P.O. Box 280  
 Bridgeport, WV 26330